

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A digital TV receiver including an A/D converter, a carrier recovery, a resampler, and a symbol clock recovery, wherein the symbol clock recovery comprising:

an operator for calculating each of the digital baseband real/imaginary signals interpolated and outputted from the resampler, and outputting the calculation;
a pre-filter for passing only a frequency of a particular band to recover the symbol clock from the output of the operator;

a timing error detector for detecting timing error information from the output of the pre-filter;

a filtering unit for filtering only the low passband signal from the timing error information outputted from the timing error detector; and

an NCO for generating two times the frequency of the symbol clock recovered according to low pass signals of the filtered timing error information and outputting to the resampler.

A digital TV receiver, comprising:

an A/D converter for converting an analog signal into a digital signal;

a carrier recovery for converting the digital passband signal into a digital baseband signal; and

a symbol clock recovery for detecting timing error information by calculating digital real/imaginary passband signals of the A/D converter or digital real/imaginary baseband signals of a carrier recovery, and for generating and outputting two times the frequency of the symbol clock corrected from the detected timing error information.

2. (Canceled)

3. (Canceled)

4. (Canceled)

5. (Canceled)

6. (Canceled)

7. (Currently Amended) The digital TV receiver of claim 16, wherein the operator squares each of the digital baseband real/imaginary signals interpolated and outputted from the ~~first~~ resampler, adds the two squared signals, and outputs the calculation; or ~~ea~~culates calculates an absolute value for each of the digital baseband real number/imaginary signals interpolated and outputted from the ~~first~~ resampler, adds the absolute value of the two signals, and outputs the calculation.

8. (Currently Amended) A digital TV receiver including an A/D converter, a carrier recovery, a first resampler, and a symbol clock recovery, wherein the symbol clock recovery comprising:

~~The digital TV receiver of claim 5, wherein the symbol clock recovery comprising:~~
a second resampler for resampling the digital passband real/imaginary signals outputted from the A/D converter into the two times the frequency of the symbol clock and interpolating each of the signals;

a operator for calculating the digital passband real/imaginary signals outputted from the second resampler and outputting the calculation;

a pre-filter for passing only a frequency of a particular band to recover the symbol clock from the output of the operator;

a timing error detector for detecting timing error information from the output of the pre-filter;

a NCO for generating two times the frequency of the symbol clock recovered according to low pass signal component of the filtered timing error information and outputting to the first and the second resamplers.

9. (Currently Amended) The digital TV receiver of claim 8, wherein the operator squares each of the digital baseband real/imaginary component signals interpolated and outputted from the second resampler, adds the two squared signals, and outputs the calculation; or calculates an absolute value for each of the digital baseband real/imaginary component signals interpolated and outputted from the second resampler, adds the absolute value of the two signals, and outputs the calculation.

10. (Currently Amended) A digital TV receiver including an A/D converter, a carrier recovery, and a symbol clock recovery, wherein the symbol clock recovery comprising:

~~The digital TV receiver of claim 1, wherein the symbol clock recovery comprises:~~

~~an operator for calculating each of the digital baseband real/imaginary signals interpolated and outputted from the carrier recovery first resampler, and outputting the calculation;~~

a pre-filter for passing only a frequency of a particular band to recover the symbol clock from the output of the operator;

a timing error detector for detecting timing error information from the output of the pre-filter;

a filtering unit for filtering only the low passband signal from the timing error information outputted from the timing error detector; and

a variable oscillator for generating two times the frequency of the symbol clock recovered according to low pass signal component of the filtered timing error information and outputting to the A/D converter.

11. (Currently Amended) The digital TV receiver of claim 10, wherein the operator squares each of the digital baseband real/imaginary signals ~~interpolated and~~ outputted from the carrier recovery, adds the two squared signals, and outputs the calculation; or ~~calculate~~ calculates an absolute value for each of the digital baseband real/imaginary component signals ~~interpolated and~~ outputted from the carrier recovery, adds the absolute value of the two signals, and outputs the calculation.

12. (Currently Amended) A digital TV receiver including an A/D converter, a carrier recovery, and a symbol clock recovery, wherein the symbol clock recovery comprising:

~~The digital TV receiver of claim 10, wherein the symbol clock recovery comprises:~~

~~a operator for calculating each of the digital passband baseband real/imaginary signals in~~ interpolated and outputted from the A/D converter, and outputting the calculation;

a pre-filter for passing only a frequency of a particular band to recover the symbol clock from the output of the operator;

a timing error detector for detecting timing error information from the output of the pre-filter;

a filtering unit for filtering only the low passband signal from the timing error information outputted from the timing error detector; and

a variable oscillator for generating two times the frequency of the symbol clock recovered according to low pass signals of the filtered timing error information and outputting to the A/D converter.

13. (Currently Amended) The digital TV receiver of claim 10 12, wherein the operator squares each of the digital passband baseband real/imaginary component signals interpolated and outputted from the A/D converter, adds the two squared signals, and outputs the calculation; or calculates an absolute value for each of the digital passband baseband real/imaginary component signals interpolated and outputted from the A/D converter, adds the absolute value of the two signals, and outputs the calculation.

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (Canceled)

19. (Canceled)

20. (Canceled)

21. (Canceled)

22. (Canceled)

23. (Canceled)